Friday, October 10, 2008

Mr. Brett A. Eckstein
Cannon & Dumphy, S.C.
595 North Barker Road
P.O. Box 1750
Brookfield, WI   53008-1750

Re: Estate of Michael Edward Bell, et al. *v.* Officer Erich R. Strausbaugh, et al.
Wisconsin – Eastern District Case No. 05-C-1176

Dear Mr. Eckstein,

I have reviewed the DNA test results in the case of Estate of Michael Edward Bell, et al. *v.* Officer Erich R. Strausbaugh, et al. as well as letter from Dr. Alan Friedman (dated November 15, 2007) that outlines his observations and expert opinions regarding those results. I feel it is important that you are aware of concerns that I have regarding Dr. Friedman's positions – particularly those spelled out in the second and third numbered paragraphs of his letter.

Dr. Friedman's first numbered paragraph spells out the conclusions drawn by Sharon Polakowski regarding her interpretation of the DNA profile generated from item A1 (a holster) using the guidelines of the Wisconsin State Crime Laboratory. Using those analysis parameters, Sharon Polakowski concluded in her January 6, 2005 report that Michael Bell was excluded as a possible contributor to this mixed sample.

The second numbered paragraph of Dr. Friedman's letter describes his re-examination of the electronic files associated with the testing of item A1. He acknowledges relying upon a lower threshold than the one that was used by Sharon Polakowski. I have been among the most out-spoken critics of the minimum peak height thresholds that most crime laboratories (including the Wisconsin State Crime Laboratory) rely upon to distinguish between signal and noise. Instead, I have been a proponent of a more statistically based approach of utilizing a limit of detection (LOD) or limit of quantitation (LOQ) as spelled out in (Gilder, J. R., T. E. Doom and D. E. Krane. 2007. Run-specific limits of detection and quantitation for STR-based DNA testing. *Journal of Forensic Sciences*, **52**(1):97-101). Run-specific LOD and LOQ thresholds are typically lower than a laboratory's minimum peak height threshold but in this case LOD values range from 29 to 35 RFUs and LOQ values range from 63 to 82 RFUs. The minimum peak height threshold that Dr. Friedman has chosen to utilize (50 RFUs and, for one locus, 45 RFUs) are below the statistically determined limit of quantitation for the run in question and, as a result, underlie conclusions that I feel should not be given much if any weight.

forensic
bioinformatics

Dan E. Krane, Ph. D., CEO

2850 Presidential Drive

Suite 150

Fairborn, Ohio 45324

ph. 937.426.9270

fx. 937.426.9271

www.bioforensics.com

Further, the means by which Dr. Friedman arrived at those thresholds (particularly the 45 RFU threshold) seems to have been driven not by a statistical analysis of the system's ability to reliably distinguish between signal and noise, but rather by a determination of how low the threshold would need to be so as to specifically include Mr. Bell as a possible contributor to the sample. Such an approach would be significantly at odds with the position that I and ten co-authors have adopted in a recently published letter to the editor of the *Journal of Forensic Sciences* (Krane, D. E., S. Ford, J. R. Gilder, K. Inman, A. Jamieson, R. Koppl, I. L. Kornfield, D. M. Risinger, N. Rudin, M. S. Taylor, W. C. Thompson. 2008. Sequential unmasking: A means of minimizing observer effects in forensic DNA interpretation. *Journal of Forensic Sciences*, **53**(4):1006-1007). Quite simply, the interpretation of an evidentiary DNA profile should not be influenced by information about a suspect's DNA profile since such information may compound an intentional or even an unintentional confirmatory bias. This bias can result in false inclusions under not uncommon conditions of ambiguity encountered in actual casework. It can also render currently used frequency statistics or likelihood ratios misleading.

The third numbered paragraph in Dr. Friedman's spells out the statistical weight that he attaches to his conclusions. First, the allele frequency databases that he relied upon do not support the use of the number of significant digits in his statistics – use of too many significant digits gives a false impression of the accuracy of those estimates. Second, the statistics he reports fail to take in to consideration the flexibility and subjectivity of the interpretation and that Mr. Bell is actually excluded as a possible contributor at at least one locus. (The exclusion from the statistical calculation of results from the D18S51 locus seems to have been driven more by the failure to include Mr. Bell than issues associated with the evidence sample itself – sometimes referred to by statisticians as the "Texas sharpshooter fallacy" or "painting the target around the arrow.") Third, Dr. Friedman's phrasing (specifically "the likelihood that a random and unrelated individual would appear to be a contributor to the holster") is unusual and implies that he has drawn conclusions regarding the probability that a person in question actually was a contributor (i.e. why would it even be relevant to talk about the probability of a random person "appearing to be a contributor" unless an analyst had already concluded that a person in question "appears to be a contributor?"). A report that implies that a person in question "appears to be a contributor" comments directly on the posterior probability of their being a contributor. Such an implication is not proper in that it goes beyond the expertise and proper scope of an expert's opinion in that it requires an evaluation of all other evidence.

Sincerely,

Dan E. Krane
Forensic Bioinformatics, Inc.